Town of Monument

Tri View Metropolitan District

Town of Palmer Lake

August 31, 2010

Grant Application

for

HB04-1365

Office of Water Conservation and Drought Planning

Water Conservation Planning Grant Program

October 18, 2010

The Town of Monument wishes to join with the Triview Metropolitan District and the Town of Palmer Lake in applying for a Water Conservation Planning Grant under HB04-1365. As a water provider, Town of Monument understands the importance of water conservation in Colorado. It is particularly concerned about conservation since it is reliant on Denver Basin groundwater for its current water supply, and attaining new sources of renewable water lies well into the future and is uncertain .

The Town is committed to implementing effective long-term water conservation as part of its water resources management strategy. The Town therefore commits to providing the inkind resources needed to complete the Water Conservation Plan and will adopt those conservation measures compatible with theTown's water supply system and the values of our customers; along with programs common to the Town, the Town of Palmer Lake and Triview Metropolitan District.

Rich Landreth
Public Works Director
Town of Monument

TRIVIEW METROPOLITAN DISTRICT
645 Beacon Lite Road
P.O. Box 849
Monument, CO 80132
(719) 488-6868 Fax: (719) 488-6565

October 18, 2010

The Triview Metropolitan District wishes to join with the Town of Monument and the Town of Palmer Lake in applying for a Water Conservation Planning Grant under HB04-1365. As a water provider, Triview Metropolitan District understands the importance of water conservation in Colorado. It is particularly concerned about conservation since it is reliant on Denver Basin groundwater for its current water supply, and attaining new sources of renewable water lies well into the future and is uncertain .

The District is committed to implementing effective long-term water conservation as part of its water resources management strategy. The District therefore commits to providing the inkind resources needed to complete the Water Conservation Plan and will adopt those conservation measures compatible with the District's water supply system and the values of our customers; along with programs common to the District and the Towns of Monument and Palmer Lake.

Catherine Greene, Manager
Triview Metropolitan District

Town of Palmer Lake
Est. 1889

October 18, 2010

The Town of Palmer Lake wishes to join with the Town of Monument and the Triview Metropolitan District in applying for a Water Conservation Planning Grant under HB04-1365. As a water provider, Town of Palmer Lake understands the importance of water conservation in Colorado. It is particularly concerned about conservation because it is substantially dependent on Arkansas River Basin water for its current water supply (whose future supply demand gap has been calculated by SWSI to be approximately 18%). Palmer Lake's supply is also supplemented by groundwater, and the future of groundwater in the Tri-Lakes area is not optimistic. Because Palmer Lake is substantially built out, it has determined that it will depend on conservation to enable it to live "within its means" from a supply perspective, and not attempt to obtain new sources of water.

The Town is committed to implementing effective long-term water conservation as part of its water resources management strategy. The Town therefore commits to providing the in-kind resources needed to complete the Water Conservation Plan and will adopt those conservation measures compatible with the Town's water supply system and the values of our customers; along with programs common to the Town, the Town of Monument and Triview Metropolitan District.

Sincerely,

John Cressman, Jr.
Mayor, Town of Palmer Lake

John Cressman, Mayor
42 Valley Crescent. P. O. Box 208. Palmer Lake, CO 80133
Phone (719) 481-2953 Fax (719) 488-9305
Website: www.ci.palmer-lake.co.us
e-mail: info@palmer-lake.org

Town of Monument
645 Beacon Light Road
Monument, CO 80132

CWCB Application Submittal Requirements

The Towns of Monument and Palmer Lake and Tri View Metropolitan District, a quasi-municipal political subdivision of the State of Colorado which was annexed to the Town of Monument in 1987 wish to develop a Water Conservation Plan. These entities (The Entities) wish to apply for a single grant to assist in this planning effort. Should this grant application be approved, the grant monies will be administered through the Town of Monument on behalf of the Town of Palmer Lake and Tri View Metropolitan District.

1. **Contact Information of Entities seeking grant**:

   Town of Monument
   Rich Landreth, Director of Public Works
   645 Beacon Light Road
   Monument, CO 80132
   719-481-2954
   rlandreth@townofmonument.net

2. **Selected firm and individuals to assist in development of Water Conservation Plan**

   Linda J. Firth, dba Water Matters!
   2419 West Bijou Street
   Colorado Springs, CO 80904
   719-213-0446
   ljfirth@comcast.net

Linda J. Firth, dba Water Matters! (WM) will complete the Water Conservation Plan for The Entities. Individuals from WM who will be involved in Plan preparation are Linda Firth and Angela Howard.

Linda Firth is a Senior Utilities Management Consultant with over 30 years experience in the management consulting field. She has helped clients develop conservation plans and programs and manage water resources. Linda was formerly water conservation manager for Colorado Springs Utilities, and designed its nationally recognized conservation programs. She also served as Black & Veatch's National Project Leader for conservation and public involvement. Linda will serve as Project Manager, being involved in development of all aspects of the program, and responsible for completion of the Water Conservation Plan, including selection and revision of capacity forecasts and identification of conservation goals, measures and programs. Linda's full resume is included in Attachment E to this application.

Angela Howard is a LEED certified P.E. with eleven years experience in water resources planning. Angela has assisted in development of both water and wastewater Master Plans and accompanying capital improvements programs, prepared water use projections and performed water system loss analyses for three south Denver water districts. She is currently working with Douglas County Water Resource Authority in delivering their water conservation program to Douglas County schools. She will assist in gathering and merging The Entities information as required in Steps 1, 2 and 3; develop revised forecasts based on conservation planning and support Linda in identification and quantification of conservation measures, associated water savings and overall plan development. Angela's full resume is included in Attachment E to this application.

Town of Monument
Rich Landreth, Director of Public Works, will lead Monument's team. He will be the primary point of contact with each Entity, and will provide review and oversight to all information requested from individual Entities. He will be specifically involved in the discussions concerning policies and planning initiatives, and identifying conservation goals and screening measures and programs for implementation. He will also be responsible for communication with the Board of Trustees concerning all aspects of plan development and incorporation of Board input into the plan. He will participate in the public participation program. Rich will oversee tracking of effectiveness of measures and programs during Plan implementation.

Rich will be assisted by the Finance Manager, the Water Operator and the Billing Clerk. The Finance Manager and the Billing Clerk will provide cost and pricing and water demand information from which the demand forecast will be developed. They will also help create the cost/benefit analysis.

The Water Operator will supply design and operation information and criteria for Monument. He will assist in profiling the water system and creating and selecting the conservation measures most appropriate for Monument's operations.

Town of Palmer Lake
Della Gray, Town Clerk, will lead Palmer Lake's Team. She will be the primary point of contact with Palmer Lake's Board of Trustees, and will provide review and oversight to all information requested from her team members. She will be specifically involved in the discussions concerning policies and planning initiatives, and identifying conservation goals and screening measures and programs for implementation. She will be responsible for communication with the Board of Trustees concerning all aspects of plan development and incorporation of Board input into the plan. She will participate in the public participation program, and oversee the implementation plan.

Della will be assisted by Steve Orcut, Operations Manager and Tara Berreth, Assistant Town Clerk. Steve will supply design and operation information and criteria for Palmer Lake. He will assist in profiling the water system and creating and selecting the conservation measures most appropriate for Palmer Lake's operations. Steve will assist in tracking effectiveness of programs and measures during plan implementation.

Tara will provide cost and pricing and water demand information from which the demand forecast will be developed. She will help create the cost/benefit analysis, and assist in the public participation program. Tara will be instrumental in tracking the effectiveness of programs and measures during plan implementation.

Tri View Metropolitan District

Tri View Metropolitan District's participation in developing the Water Conservation Plan will largely be handled by Monument staff, inasmuch as Monument staff administer water operations for the District. System profiling, forecasting, goal setting, measure and program selection and review, public participation and implementation will be made more effective by the participation of Catherine Green, who serves as both Town Manager for Monument and General Manager of Tri View Metropolitan District. Ms. Green's involvement, like Rich Landreth's, will ensure a broader approach to the concept of area inclusion. She also brings a broader perspective to the anticipated rapid development of the Metropolitan District as it functions as a part of the slower growing community in general (Monument and Palmer Lake).

Leadership of Rich Landreth, Catherine Green and Della Gray will ensure that the Entities develop a Plan that is first and foremost in the interests of the wider community.

3. Identification of retail water delivery of the Entities for past five years – Table One shows water deliveries for commercial and residential sectors, populations, water source and gallons per capita per day (both systemwide and residential) for the individual entities, and for the three entities combined. Both Monument and Tri View Metropolitan District have numerous sub-sectors within the commercial category, but for sake of consistency

these sub-sectors were combined under one commercial heading. These more detailed breakouts of the commercial sector will be useful in the actual conservation planning, and especially useful in the implementation of the Water Conservation Plan.

Table One - Retail Water Delivery for Past Five Years

	2009	2008	2007	2006	2005
Town of Palmer Lake					
Sources: surface and groundwater					
Population	2360	2360	2355	2337	2307
Residential	83,101,618	92,660,260	82,802,629	86,175,140	86,598,780
Commercial	10,270,986	11,452,391	10,234,032	10,650,860	10,703,220
Subtotal	93,372,604	104,112,651	93,036,661	96,826,000	97,302,000
Systemwide gpcd	108	121	108	114	116
Residential gpcd	96	108	96	101	103
Town of Monument					
Source: groundwater					
Population	2080	2048	2017	1986	1956
Residential	65,000,000	62,400,000	62,400,000	55,711,760	67,615,200
Commercial	60,000,000	57,600,000	57,600,000	51,426,240	56,644,000
Subtotal	125,000,000	120,000,000	120,000,000	107,138,000	124,259,200
Systemwide gpcd	165	161	163	148	174
Residential gpcd	86	83	85	77	95
Tri View Metropolitan District					
Source: groundwater					
Population	2652	2532	2412	2258	2050
Residential	139,086,400	128,920,000	121,295,200	113,670,400	113,533,600
Commercial	34,771,600	32,230,000	30,323,800	28,417,600	28,383,400
Subtotal	173,858,000	161,150,000	151,619,000	142,088,000	141,917,000
Systemwide gpcd	180	174	172	172	190
Residential gpcd	144	139	138	138	152
Total Delivery All Entities	392,230,604	385,262,651	364,655,661	346,052,000	363,478,200
Population - all Entities	7092	6940	6784	6581	6313
Average Systemwide gpcd - all Entities	152	152	147	144	158
Total Residential Deliveries - all Entities	287188018	283980260	266497829	255557300	267747580
Average Residential gpcd - all Entities	111	112	108	106	116

4. Covered Entity

The applicants do not constitute a covered entity at this time. They anticipate reaching that capacity by the end of the planning period (ten years). However, the Towns of Monument and Palmer Lake, and the Tri View Metropolitan District recognize the significance of water conservation and its role in the area's upcoming Master Planning.

a. They are all are faced with obtaining new and sustainable sources of water while limiting use of groundwater in future years.
b. The Monument-Palmer Lake area is seen as a highly desirable place to live, and is projected to grow at a rate comparable to, if not greater than, that of surrounding communities such as Colorado Springs and Castle Rock.
c. This reality prompts the Entities to begin effective conservation planning concurrently with its Master Planning.

We believe that the Entities comprise an appropriate joint applicant for CWCB grant funds, in that they share many commonalities that will facilitate implementation of a communitywide conservation plan, including:

- Several common boundaries which will increase during the tenure of the Water Conservation Plan. As stated earlier, Tri View Metropolitan District is already fully annexed to the Town of Monument. It is likely that a development contiguous to both Palmer Lake and Monument will be annexed to Monument in the near future, adding contiguous boundaries and solidifying the community unit that Monument-Palmer Lake comprise
- A shared wastewater facility
- Similar infrastructure, source water and water rights
- Shared community values and demographics
- Shared communication channels
- Common need for expanded water supply in coming years
- Common history
- Common institutional framework – both Palmer Lake and Monument are municipalities, both have Boards of Trustees as their governing bodies. Both will have the ability to pass ordinances and regulations, and to enforce them.
- Compatible conservation goals. Both understand that groundwater cannot and should not be depended on solely for meeting all future needs. Both Towns have aging infrastructure and the accompanying need for water loss control. Both endorse water waste and related ordinances to minimize waste. Both understand the need for rates that keep the utility function operating efficiently while encouraging conservation.

The community's commonalities will facilitate the public education, communication and public involvement aspects of a successful and effective Water Conservation Plan – one message, one audience.

The ability to develop a Water Conservation Plan concurrently with a Master Plan will make both more meaningful, and of greater long term utility to the Entities.

Finally, one grant to prepare one plan covering three Entities is cost effective for both the Entities and CWCB. The Entities have agreed that Monument's Public Works Director will serve as grant administrator for Palmer Lake and Tri View Metropolitan District, should the grant be approved.

Attachment D contains organization charts for Palmer Lake and Monument as evidence that they are "other State or Governmental Entities", under Section 1.37 -60-126(7)b). The Town of Palmer Lake is located in El Paso County, and comprises approximately 6 square miles, extending east to two miles west of I-25, west to the base of Sundance and Chataqua Mountains, north to County Line Road and south to unincorporated El Paso County.

The Town of Monument is located in El Paso County, bordered by National Forest on the west, the United States Air Force Academy to the south, foothills and rock outcroppings to the north and rolling plains to the east. It covers approximately 5 square miles.

Tri View Metropolitan District is comprised of approximately 2,580 acres in an area bounded on the west by the Santa Fe Trail on the west side of I-25, Kingswood Estates on the east and extending from Colorado Highway 105 on the north to Baptist Road on the south. It includes includes single family, multi-family, commercial, and industrial zones and public sites. The District was formed in 1985 as a "quasi-municipal corporation and political subdivision of the State of Colorado" by District Court decree pursuant to the laws of the State. As previously noted, Tri View was annexed into the Town of Monument in 1987.

- **Background characterizing the water system, potential growth and any other pertinent issues that relate to the stated evaluation criteria**:

a. Historic water use represents actual water demand data obtained from Entities' billing records. Future use projections were obtained from the Pikes Peak Regional Water Authority's Water Infrastructure Study, tempered with Entity information and DOLA projections.
b. Palmer Lake divides water sales into two categories, commercial and residential, both categories are shown on the previous table. Monument and Tri View track use by meter size. Meter sizes and typical use are shown below: (Note: Monument's 6" residential meter serves a trailer park of approximately 150 units.)

Residential and Commercial Use, Monument and Tri View

Monument	***Residential 3/4"***	***Residential 1"***	***Res 1.5"***	***Comm 3/4"***	***Comm 1"***	***Comm 1.5"***	***Comm 2"***	***Comm 3"***	***Comm 4"***	***Res 6"***
# of customers	830	1	5	52	20	17	6	1	2	1
% of use	97%				3% combined commercial					

Tri View	***Residential 3/4"***	***Residential 1"***	***Res 1.5"***	***Comm 1"***	***Comm 1" Irr***	***Comm 1.5"***	***Comm 2"***	***Comm 3"***	***Comm 2" Irr***	***Comm 1.5 Irr***
# of customers	1060			10	8	11	6	2	2	1
% of use	80%					20% combined				

c. The Entities are acutely aware of the costs associated with the development of a new renewable water resource, and the challenges inherent in maintaining groundwater as a future supply. The Entities were participants in the Water Infrastructure Study (TetraTech, et al, 2009). The study opined :

"It is anticipated that the WIPS participants will encounter limitations on the Denver Basin aquifer water supply before renewable water supplies are online. Even interim water projects require years to plan, permit, design and build. Action is needed to improve efficient use of existing supplies….."

It is this urgent need to improve efficient use of existing supplies, emphasized by WIPS, that drives the need for the Entities to begin immediately to develop a workable Water Conservation Plan. To this end, the Entities will target a minimum of 1.5% reduction per year in systemwide per capita use during the planning period, e.g. through 2020. Although the *individual* urgencies for Palmer Lake and Monument differ somewhat, the joint need is clear. Where Palmer Lake is close to buildout and has chosen to limit future demands to what is currently available, conservation becomes necessary to ensure that the Town can continue to serve its customers needs reliably within the resources it has. Monument's urgency stems from its sole dependence on groundwater to serve a growing population, and the length of time and complexity involved in locating and developing an alternate sustainable source of water. Tri View Metropolitan District has the same immediate need as the Town of Monument, with the additional complication of probable rapid growth. It is reasonable that the Entities combine their compelling needs to achieve the necessary efficient use of existing supplies in the most expedient way possible.

d. The Statewide Water Supply Initiative conducted by CWCB identified an 18% gap between water needs and water supplies in the Arkansas River Basin by 2025. Water conservation is one method identified by that work that can be used to help fill the gap between water needs and water supplies.

The Entities obtain water supply from groundwater wells in the Denver Basin Aquifer (Monument and Tri View Metropolitan District, and to a limited extent Palmer Lake), and from surface water (Palmer Lake). Palmer Lake is within the Monument Creek Basin in the Fountain Creek Watershed. The Fountain Creek watershed includes approximately 927 square miles that drain south into the Arkansas River. The Town's water diversions are from Upper Monument Creek. It also operates a backup groundwater system that serves peak demands, and for which production is included in the past and future production number for the Town.

None of the Entities has a formal, written conservation plan in place at this time. Each, however, has some level of conservation measures and programs in effect. All have certain foundational elements such as ordinances. Monument and Tri View Metro offer numerous informational programs, and as indicated in an earlier section, the Towns of Monument and Palmer Lake have exemplary levels of per capita water use. Monument and Tri View maintain detailed water use by customer category.

The concurrent efforts of the Water Conservation Plan and the Master Planning will add to the region's understanding of its water system's adequacy, stability and reliability.

At this time, the Entities have no existing loans with CWCB. The Town of Palmer Lake is currently updating its water treatment plant under a State Revolving Fund loan.

- Description of the project plan:

In the Water Conservation Plan, the Entities will quantify their current water usage, develop water conservation programs and measures to implement and determine the benefit-cost of the implementation. The plan will describe new conservation measures and goals the Entities intend to achieve. Current use, projected use, goals, measures and programs will be shown for each entity, and overall goals, measures and programs will be developed for the entities as well. It appears at this time that the three entities have significantly different levels of existing conservation efforts in place. The Plan will draw on Great Western Institute's levels of programming so as to bring each Entity to a level of conservation effort appropriate for its individual situation, while achieving individual and collective conservation goals. The Entities are confident they can achieve overall community water savings of 1.5% per Plan year.

See Attachment A – Scope of Work

- Proposed project schedule including milestones

  See Attachment B – Conservation Plan Timeline

- List of funding sources for total project costs of $$49,630:

Grant	$36,470	Consultant Cost to prepare and complete Plan
Entities staff	$13,160 (in kind services applied to Match requirement)	Staff – labor costs for research, data collection and review; and notification and participation In the public outreach programs

Detail of labor costs and consultant costs provided on Attachment C.

The Entities are committed to water resource sustainability and water conservation. The entities intend to do their part to preserve water for future generations. Both Staff and Boards of each entity understand the needs and benefits, and the immediacy, of implementing long-term water conservation programs. We are committed to complete a Water Conservation Plan in its entirety to be approved by CWCB for the grant money requested.

The Director of Public Works for the Town of Monument has the authority to commit the resources to fulfill that obligation for the Town of Monument and the Tri View Water District.

_____
Travis Easton, Mayor, Town of Monument

_____
Date

_____
John Cressman, Mayor, Town of Palmer Lake

_____
Date

_____
Robert Eskridge, President, Tri View Metropolitan District Board of Directors

_____
Date

Attachment A

Conservation Plan - Scope of Work

This Scope of Work describes the work to be performed by WM for the Entities. The scope outlines the tasks required to successfully complete a Water Conservation Plan in accordance with CWCB's Water Conservation Plan guidelines and policies.

The scope includes the following tasks:

Task A – Develop Water Conservation Plan per CWCB Guidance Document

Task B – Public Review Process

Task A – Develop Water Conservation Plan

Purpose

Water Conservation Plans are encouraged under the Water Conservation Act of 2004 for entities that seek financial assistance from the CWCB or the Colorado Water Resources and Power Development Authority. The objective of this task is to develop a Plan that meets the CWCB requirements, makes beneficial and responsible use of the Entities's water supplies, and ultimately enables the Entities to apply for state financial assistance for subsequent projects.

Approach

The Water Conservation Plan will be developed following CWCB's Water Conservation Plan Development Guidance Document. This document outlines the requirements needed for CWCB's approval. WM will submit a draft Plan to the Entities for comments prior to a public-review period. Following the public-review process, WM will incorporate public comments and submit the Plan to CWCB for final approval.

The development of the Plan is divided into subtasks similar to what is indicated in the CWCB Model Plan Template. These subtasks list the items that are to be included in the Water Conservation Plan for CWCB approval. Where appropriate, WM will use previous studies completed for the Entities.

Step 1 – Profile the Existing Water System

Purpose

The activities described under this task will provide information on the Entities' existing water supply systems.

Approach

1.1 **Profile physical characteristics of the existing water supply system**: WM, with the help of Entities' staff, will describe the physical characteristics of the water system using Worksheet 1-1 as a guide. Included in the summary will be key system characteristics, geographic area served, population and connections served, types of key water users, key existing facilities, and water demand.

1.2 **Identify all water sources**: WM will identify and describe all of the systems' water supply sources including attributes, age, seniority, and conditions of its use. Estimates will be made for any missing information.

1.3 **Identify system limitations**: WM will describe the Entities' water system limitations using Worksheet 1-2 as a guide.

1.4 **Characterize water costs and pricing structures**: In coordination with Entities' staff, WM will document past and current history of water sales.

1.5 **Review current policies and planning initiatives**: In coordination with Entities' staff, WM will discuss major policies the Entities have in place that affect water use under normal and drought conditions. In addition, WM will coordinate to summarize major planning efforts to date.

1.6 **Summarize current water conservation activities**: WM will summarize current water conservation activities using Worksheet 1-3 as a guide.

1.7

Step 2 – Characterize Water Use and Demand Forecast

Purpose

The activities described under this task will provide information on the Entities' existing and projected water use.

Approach

2.1 **Characterize current water use**: In coordination with Entities' staff, WM will review sales records, diversion records and billing records to summarize current water use. Included in the discussion will be quantifications of indoor vs. outdoor use and potable vs. non-potable use. WM will also examine historical water use by tap size, identify top water purchasers, and quantify the amount of the water purchased.

2.2 **Select forecasting method**: A demand forecasting method will be selected and described.

2.3 **Prepare demand forecast**: WM will work with the Entities to estimate future water demand by tap size or customer category according to the selected forecasting method. Worksheet 2-1 will be used as a guide. For irrigation uses, a per-acre projection will be used.

Step 3 – Profile Proposed Facilities

Purpose

The activities described under this task will identify and describe planned improvement based on the results from step two and estimate the associated costs.

Approach

3.1 **Estimate supply costs based on the demand forecast**: WM will work with Entities' staff to prepare incremental and total costs for water supplies that are appropriate for the Entities.

3.2 **Identify and describe anticipated capital facility improvements and additions**: With the help of staff and existing planning documents, WM will summarize facility needs over a similar time horizon used for demand forecasting using Worksheet 3-1 as a guide.

3.3 **Estimate total, annual and unit cost of the improvements**: WM will work closely with staff to develop reasonable cost estimates of improvements. Worksheet 3-2 will be used as a guide.

3.4 **Develop a water supply capacity forecast**: WM will combine information gathered in this step to provide a summarized supply capacity forecast.

Step 4 – Identify conservation Goals

Purpose

The activities described under this task will identify conservation goals for the Entities.

Approach

4.1 **Develop water conservation goals**: WM will develop water conservation goals in collaboration with the Entities' Councils, Trustees and staff. Areas for water conservation will be identified by staff based on results from Steps 2 and 3. A specific water-savings target, as well as how the savings will be measured, will be identified.

4.2 **Document the goal development process**: WM will document the process used to develop the water conservation goals.

Step 5 – Identify conservation Measures and Programs

Purpose

The activities described under this task will identify conservation measures and programs the Entities may implement to reach the conservation goals identified in Step 4.

Approach

5.1 **Identify conservation measures and programs**: Entities' staff and WM will collectively develop water conservation measures using Worksheets 5-1 and 5-1 as guides.

5.2 **Develop and define screening criteria**: Entities' staff and WM will describe the screening criteria used to evaluate and eliminate some of the water conservation measures and programs.

5.3 **Screen conservation measures and programs**: The screening criteria will be applied to the "universal" list of conservation measure and programs to determine which ones will be further evaluated in the planning process.

Step 6 – Evaluate and Select Conservation Measures and Programs

Purpose

The activities described under this task are intended to evaluate and select the optimal conservation measures and programs the Entities may implement.

Approach

6.1 **Create combinations of measures and programs**: WM will review all conservation measures and programs that passed the screening criteria and group them, so similar measures and associated water savings are not double counted.

6.2 **Estimate costs and water savings** of conservation options: Using Worksheet 6-1 as a guide, Entities' staff and WM will estimate the cost of each conservation measure/program and the associated water savings. A benefit/cost analysis will be included.

6.3 **Compare benefits and costs:** WM will summarize conservation measure costs and water savings, including a net benefit from all suggested measures using Worksheets 6-1 and 6-2.

6.4 **Define evaluation criteria**: Entities' staff and WM will develop criteria used to select the conservation measures/programs for implementation. Key criteria will be cost of implementation and potential water savings.

6.5 **Select conservation measures and programs**: WM will summarize the evaluation of each measure/program based on the evaluation criteria and indicate, with staff and management input, which measures/programs will be implemented. The water savings from the implementation will be estimated using Worksheet 6-3 as a guide.

Step 7 – Integrate Resources and Modify Forecasts

Purpose

The activities described under this task will modify the supply and demand forecasts to account for water savings from the selected conservation measures and programs. The benefits of conservation as well as revenue effects will also be addressed.

Approach

7.1 **Revise demand forecast**: WM will revise the demand forecast prepared in Step 2 to account for the water savings of the measures/programs from Step 6. Worksheet 7-1 will be used as a guide.

7.2 **Identify project-specific savings**: Entities' staff and WM will determine the effect of water savings from conservation on the timing and capacity of facility improvement projects and quantify savings.

7.3 **Revise supply-capacity forecast**: WM will revise the supply capacity forecast based on findings from Step 7.2

7.4 **Summarize forecast modifications and benefits of conservation**: WM will develop a graph showing demand and supply with and without conservation.

7.5 **Consider revenue effects**: WM will quantify impacts to revenues from implementation of water conservation. Savings in capital improvement projects or delayed water acquisition will be presented against loss in sales revenue. Strategies to address this issue will be discussed.

Step 8 – Develop Implementation Plan

Purpose

The activities described under this task will present a strategy for implementing the selected conservation measures and describe methods for monitoring the success of the plan.

Approach

8.1 **Develop implementation schedule**: WM and Entities' staff will discuss significant implementation actions and obstacles for implementing the selected conservation measures. WM will develop a reasonable implementation schedule and timetable to follow.

8.2 **Develop plan for public participation in implementation**: Entities' staff and WM will describe how to involve the public in the implementation process.

8.3 **Develop plan for monitoring and evaluation progress**: WM, with input from Entities' staff, will determine and describe how the Water Conservation Plan will be measured for effectiveness

8.4 **Develop plan for updating and revising the plan**: Entities' staff will describe when it intends to update the Water Conservation Plan.

8.5 **Define plan adoption/date/plan completed date/plan approved date**: A copy of the approval resolution adopting the final Water Conservation Plan will be included. WM will develop a schedule for Board approval and adoption.

Step 9 – Monitor, Evaluate and Revise Conservation Activities and the Conservation Plan

Purpose

Commit to monitor the performance of the plan including updating the plan as required.

Approach

9.1 **Implement the plan**: The plan will be implemented and monitored based on the schedule developed from Step 8.

Task B – Public Review Process

Purpose

The Entities will seek public input on the plan through use of a 60-day public review period.

Approach

WM will attend one Board meeting during the 60 day public review period to help answer questions from the public on the Water conservation Plan. This meeting will seek feedback on the Water Conservation Plan from the Entities' residents.

The Entities, with help from WM, will coordinate the following:

1) Announcing the public-review period and making the plan publicly available
2) Advertising to the public that comments will be taken at a specific Board meeting during the 60 day public review period.
3) Collecting and organizing public comments. These comments will be provided to WM following the public- review period.

WM will incorporate and respond to public comments in the final draft of the plan.

Requirements:

The Entities' Board, Council, Trustees and staff will review a final draft of the plan and provide comments.

1. WM will incorporate the Entities' comments prior to the public review process.
2. The Entities will formally adopt the final plan.
3. WM will submit the final plan to CWCB.
4. CWCB will review final plan.

Deliverables

WM will perform the following:

1. Submit monthly invoices to the Entities with brief progress reports
2. Submit 50% and 75% progress reports to the Entities, for forwarding to CWCB.
3. Provide draft plan to the Entities for comments prior to submission to CWCB.
4. Submit the final plan electronically to CWCB with all comments, including public input.
5. Provide two hard copies and one electronic copy of the final Water Conservation Plan to each Entity after CWCB's final approval.

Water Conservation Plan for Monument, Palmer Lake and Tri View Water District																									
Attachment C - Fee Estimate																									
																						Total In Kind Contribution		Total Plan Cost	**CWCB Grant Request**
Work Items	**Water Matters (WM)**					**Town of Monument and TriView Metropolitan District**										**Town of Palmer Lake**									
	L. Firth/$105/hr		A. Howard/$75/hr			Dir Pub Works/$52 /hr		Water Operator /$40/hr		Fin Mgr $48/hr		Bill Clrk/$30 /hr		Town Mgr/$60 /hr		Ops Mgr/$35 /hr		Town Clrk/$26 /hr		Asst.Town Clrk/$20 /hr					
	Hours	Subtotal	Hours	Subtotal	Total WM Cost	Hours	Subtotal	Hours	Subtotal	Hours	Subtotal	Hours	Subtotal	Hours	Subtotal	Hours	Subtotal	Hours	Subtotal	Hours	Subtotal	Hours	Dollars		
Task A - Develop Water Conservation Plan																									
Step 1 - Profile of Existing Water Systems																									
1.1 Profile Existing Water System	3	315	5	375	690	4	208	2	80			1	30			2	70			2	40	11	428	1118	690
1.2 Identify Sources of Water	2	210	5	375	585	2	104	1	40							1	35					4	179	764	585
1.3 Identify System Limitations	2	210	5	375	585	2	104	2	80							2	70					6	254	839	585
1.4 Characterize Water Costs and Pricing	3	315	5	375	690	4	208	1	40	2	96	2	60	1	60					3	60	13	524	1214	690
1.5 Review Current Policies and Planning Initiatives	2	210	7	525	735	4	208	1	40	2	96			2	120	4	140	1	26			14	630	1365	735
1.6 Summarize Current Water Conservation Activities	10	1050	0	0	1050	6	312	1	40					1	60	1	35	1	26			10	473	1523	1050
Subtotal	**22**	**2310**	**27**	**2025**	**4335**	**22**	**1144**	**8**	**320**	**4**	**192**	**3**	**90**	**4**	**240**	**10**	**350**	**2**	**52**	**5**	**100**	**58**	2488	6823	**4335**
																								0	
Step 2 - Characterize Water Use and Forecast Demand																								0	

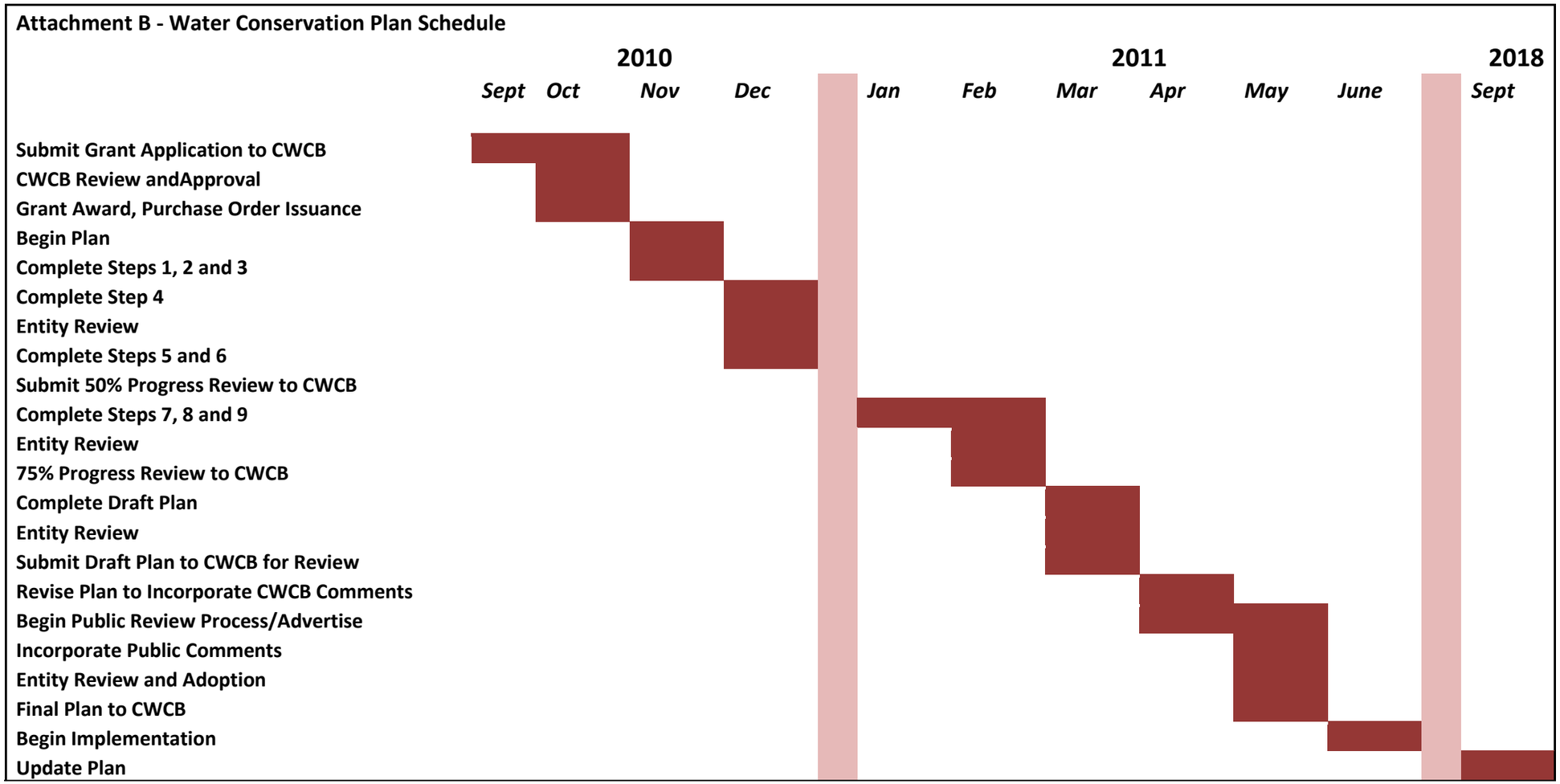
2.1 Characterize Current Water Use	5	525	10	750	1275	4	208	2	80	3	144	4	120	2	120					1	20	**16**	692	1967	1275
2.2 Select Forecasting Method	5	525	5	375	900	2	104			1	48			1	60							**4**	212	1112	900
2.3 Prepare Demand Forecast	5	525	10	750	1275	3	156															**3**	156	1431	1275
Subtotal	**15**	**1575**	**25**	**1875**	**3450**	**9**	**468**	**2**	**80**	**4**	**192**	**4**	**120**	**3**	**180**					**1**	**20**	**23**	1060	4510	**3450**
																								0	
Step 3 - Profile Proposed Facilities																								0	
3.1 Identify and Cost Potential Facility Needs	3	315	11	825	1140	6	312	**2**	**80**	2	96			4	240	2	70					**16**	798	1938	1140
3.2 Prepare an Incremental Cost Analysis	3	315	7	525	840	2	104															**2**	104	944	840
3.3 Develop Preliminary Capacity and Costs Forecasts	3	315	11	825	1140	6	312	**2**	**80**	2	96			2	120	2	70	2	52	1	20	**17**	750	1890	1140
Subtotal	**9**	**945**	**29**	**2175**	**3120**	**14**	**728**	**4**	**160**	**4**	**192**			**6**	**360**	**4**	**140**	**2**	**52**	**1**	**20**	**35**	1652	4772	**3120**
																								0	
Step 4 Identify Conservation Goals																								0	
4.1 Develop Water Conservation Goals	10	1050	0	0	1050	3	156							2	120			2	52			**7**	328	1378	1050
4.2 Document the Goal Development Process	16	1680	0	0	1680	1	52															**1**	52	1732	1680
Subtotal	**26**	**2730**	**0**	**0**	**2730**	**4**	**208**							**2**	**120**			**2**	**52**			**8**	380	3110	**2730**
																								0	
Step 5 - Identify Conservation Measures and Programs																								0	
5.1 Identify Conservation Measures and Programs	10	1050	0	0	1050	1	52							1	60							**2**	112	1162	1050
5.2 Develop and Define Screening Criteria	10	1050	0	0	1050	1	52							1	60			1	26			**3**	138	1188	1050
5.3 Screen Conservation Measures and Programs	10	1050	0	0	1050	4	208							2	120			2	52			**8**	380	1430	1050
Subtotal	**30**	**3150**	**0**	**0**	**3150**	**6**	**312**							**4**	**240**			**3**	**78**			**13**	630	3780	**3150**
																								0	
Step 6 - Evaluate and Select Conservation Measures and Programs																								0	
6.1 Create Combinations of	1	10	0	0	1050																	**0**	0	105	1050

Measures and Programs	0	50																					0	
6.2 Estimate Costs and Water Savings of Conservation Options	20	2100	0	0	2100	1	52							1	60							**2**	112	2212	2100
6.3 Compare Benefits and Costs	10	1050	0	0	1050	2	104							1	60			1	26			**4**	190	1240	1050
6.4 Define Evaluation Criteria	10	1050	0	0	1050	1	52							1	60			1	26			**3**	138	1188	1050
6.5 Select Conservation Measure and Programs	5	525	0	0	525	4	208			1	48			2	120			1	26			**8**	402	927	525
Subtotal	**55**	**5775**	**0**	**0**	**5775**	**8**	**416**			**1**	**48**			**5**	**300**			**3**	**78**			**17**	842	**6617**	**5775**
																								0	
Step 7 - Integrate Resources and Modify Forecasts																								0	
7.1 Revise Demand forecasts	3	315	6	450	765	2	104							2	120		0	1	26			**5**	250	1015	765
7.2 Identify Project Specific Savings	7	735	6	450	1185	2	104							2	120		0	1	26			**5**	250	1435	1185
7.3 Revise Supply-Capacity Forecasts	2	210	6	450	660	2	104							2	120		0	1	26			**5**	250	910	660
7.4 Summarize Forecast Modifications and Benefits of Conservation	4	420	6	450	870	4	208							2	120		0	1	26			**7**	354	1224	870
7.5 Consider Revenue Effects	4	420	5	375	795	2	104			4	192			2	120		0	1	26			**9**	442	1237	795
Subtotal	**20**	**2100**	**29**	**2175**	**4275**	**12**	**624**			**4**	**192**			**10**	**600**	**0**	**0**	**5**	**130**			**31**	1546	**5821**	**4275**
																								0	
Step 8 - Develop Implementation Plan																								0	
8.1 Develop Implementation Schedule	8	840	0	0	840	2	104			1	48			2	120			1	26			**6**	298	1138	840
8.2 Develop Plan for Public Participation in Implementation	14	1470	0	0	1470	2	104							2	120			1	26			**5**	250	1720	1470
8.3 Develop Plan for Monitoring and Evaluation Processes	6	630	0	0	630	2	104			1	48			2	120			1	26			**6**	298	928	630
8.4 Develop Plan for Updating and Revising Conservation Plan	4	420	0	0	420	1	52							2	120			1	26			**4**	198	618	420
8.5 Define Plan Adoption Date/Plan Completion Date/Plan Approved Date	4	420	0	0	420	2	104							2	120			2	52	2	40	**8**	316	736	420
Subtotal	**36**	**3780**	**0**	**0**	**3780**	**9**	**468**			**2**	**96**			**10**	**600**			**6**	**156**	**2**	**40**	**29**	1360	**5140**	**3780**
																								0	

Step 9 - Monitor Evaluate and Revise conservation Activities																																				0		
9.1 Implement the Plan		6		630		0		0		630		10		520				4		192		4		120		10		600				10		260		80		160		46		1852		2482		630
Subtotal		**6**		**630**		**0**		**0**		**630**		**10**		**520**				**4**		**192**		**4**		**120**		**10**		**600**				**10**		**260**		**8**		**160**		**46**		1852		**2482**		**630**
Task A Total		**219**		**22995**		**1102**		**8250**		**31245**		**94**		**4888**		**14**	**560**	**23**		**1104**		**11**		**330**		**54**		**3240**		**14**		**490**		**33**		**858**		**17**		**340**		**260**		11810		**43055**		**31245**
																																								0		0		
																																								0		0		
Public Meeting Presentation, Feedback Solicitation		15		1575		0		0		1575		5		260		1	**40**	2		96						4		240				4		104		2		40		18		780		2355		1575
Task B Total		**15**		**1575**		**0**		**0**		**1575**		**5**		**260**		**1**	**40**	**2**		**96**		**0**		**0**		**4**		**240**		**0**		**4**		**104**		**2**		**40**		**18**		**780**		**2355**		**1575**
General Project Expenses																																										0				
Conference with CWCB after final review, comment incorporation		12		1260		0		0		1260		6		312												3		180				3		78						12		570		1830		1260
Travel		0		0		0		560		560																															0		560		560
Graphic Services, including report reproduction		0		1830		0		0		1830																															0		1830		1830
General Project Expenses Total		**12**		**3090**		**0**		**560**		**3650**		**6**		**312**		**0**	**0**	**0**		**0**		**0**		**0**		**3**		**180**				**3**		**78**		**0**		**0**		**12**		570		**4220**		**3650**
																																									0		0		
Project Totals		**246**		**27660**		**1102**		**8810**		**36470**		**105**		**5460**		**15**	**600**	**25**		**1200**		**11**		**330**		**61**		**3660**		**14**		**490**		**40**		**1040**		**19**		**380**		**290**		13160		**49630**		**36470**

In kind contribution of the Entities equals 26.5%

Attachment B - Water Conservation Plan Schedule



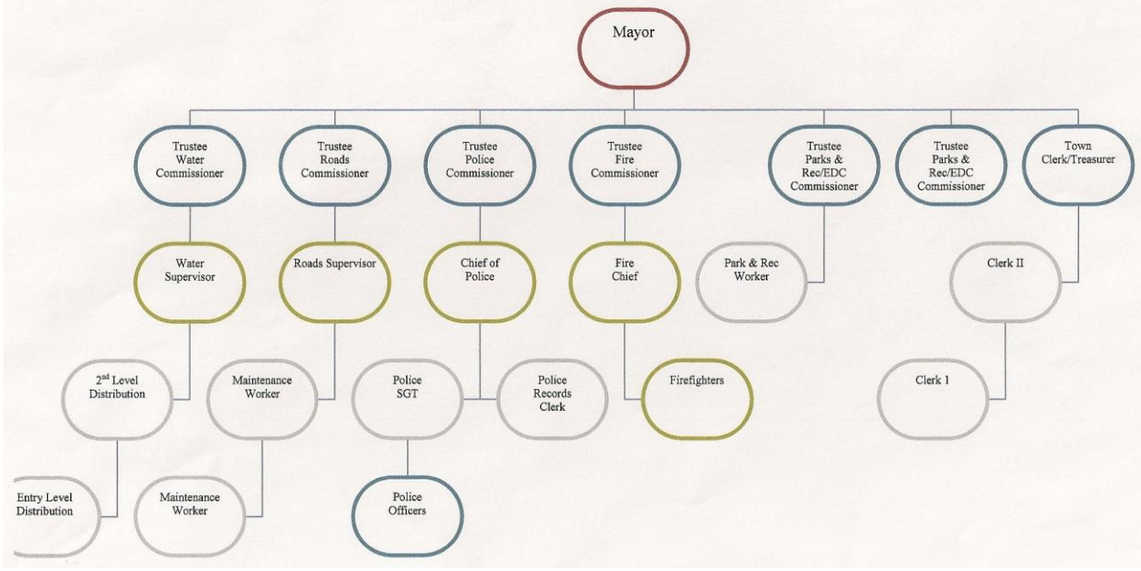
Attachment D

Organizational Charts

Map (BBA)

Growth Chart (Lytle)

TOWN OF PALMER LAKE
ORGANIZATIONAL CHART



BOARD OF Trustees

Board Of Trustees
Mission Statement
Organization Chart
Meeting Agenda
Meeting Minutes
Board Openings

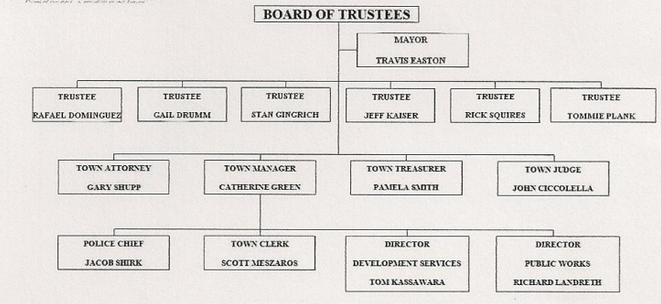
Monument Town Hall

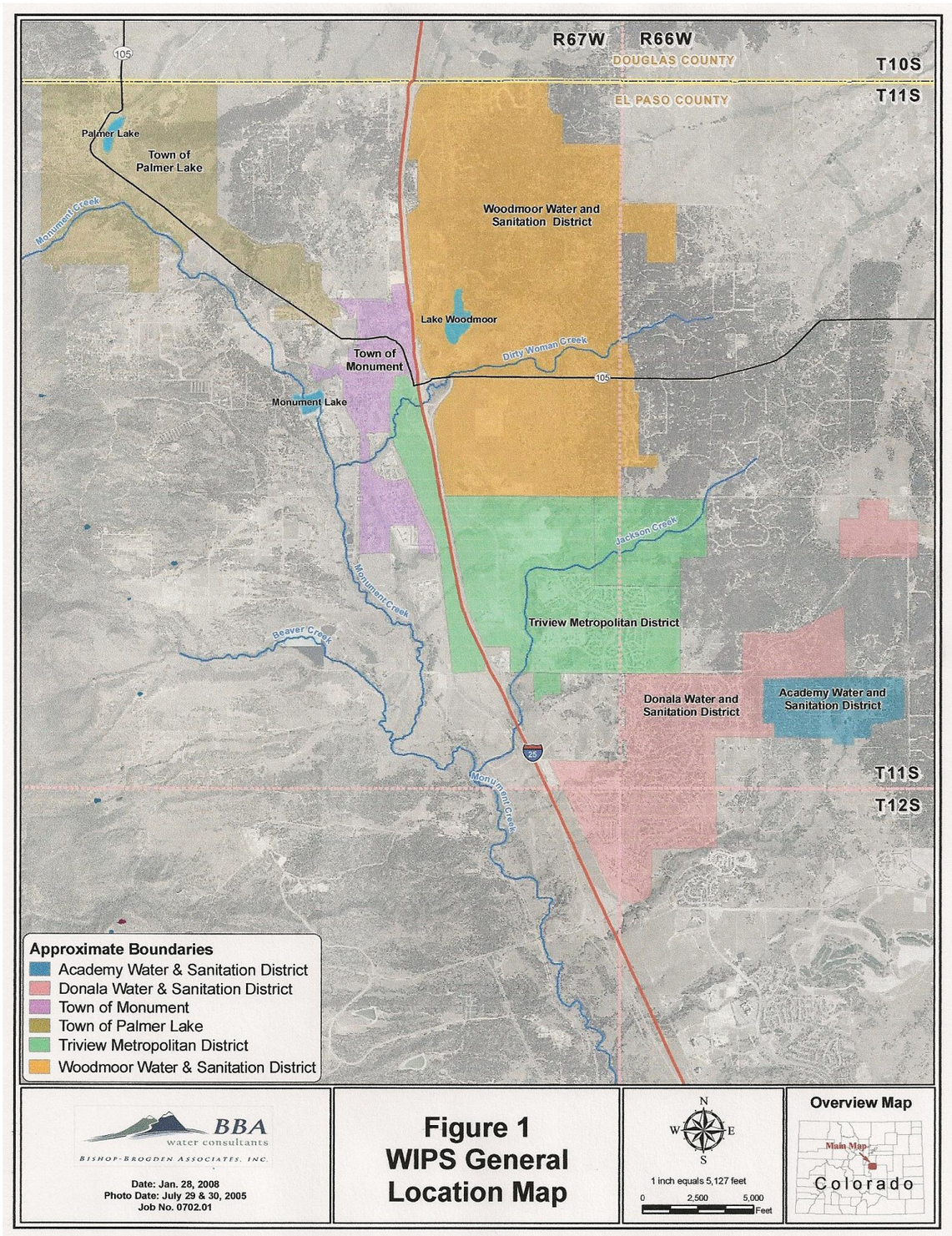
645 Beacon Lite Road
Monument, CO 80132

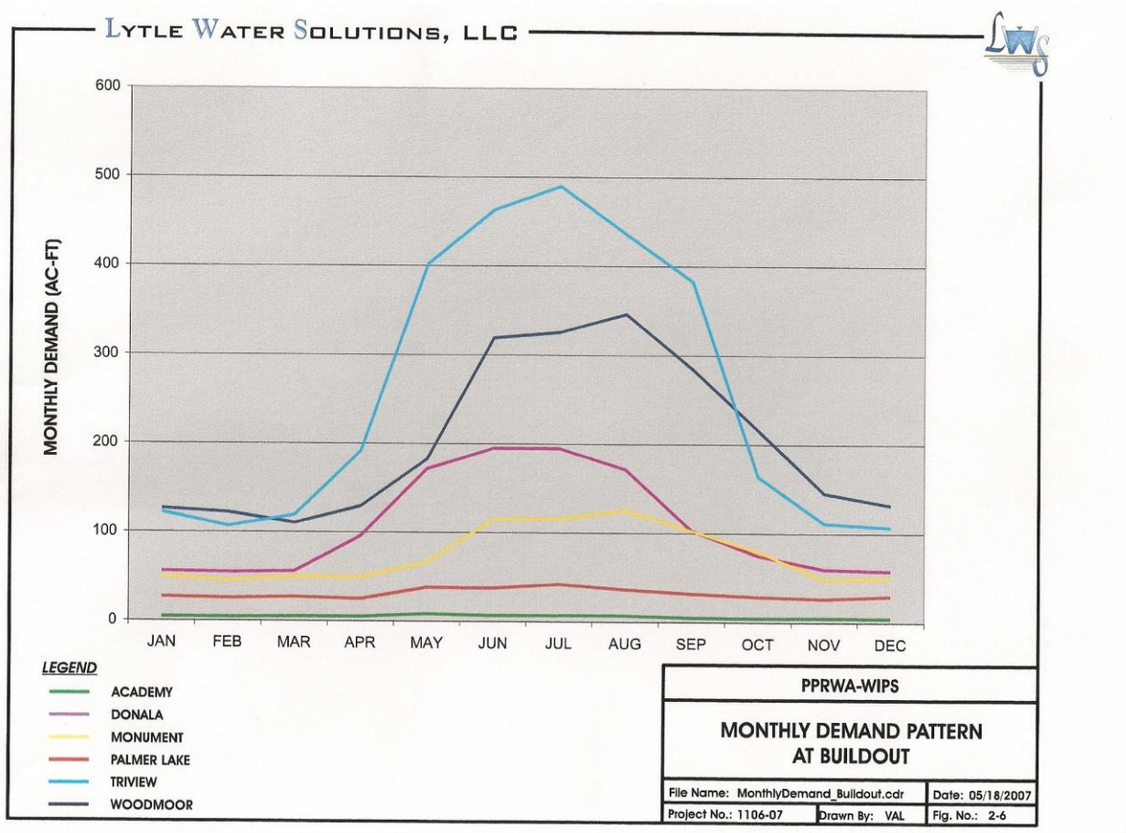
TEL: 719.481.2954
FAX: 719.884.8011

Hours: Monday through Friday
8:00am to 5:00pm

TOWN OF MONUMENT
ORGANIZATION CHART




R67W
R66W
DOUGLAS COUNTY
EL PASO COUNTY
T10S
T11S
T11S
T12S
105
Palmer Lake
Town of Palmer Lake
Monument Creek
Woodmoor Water and Sanitation District
Lake Woodmoor
Dirty Woman Creek
Town of Monument
Monument Lake
Jackson Creek
Monument Creek
Triview Metropolitan District
Beaver Creek
Donala Water and Sanitation District
Academy Water and Sanitation District
Monument Creek
Approximate Boundaries
Academy Water & Sanitation District
Donala Water & Sanitation District
Town of Monument
Town of Palmer Lake
Triview Metropolitan District
Woodmoor Water & Sanitation District
BBA water consultants
BISHOP-BROGDEN ASSOCIATES, INC.
Date: Jan. 28, 2008
Photo Date: July 29 & 30, 2005
Job No. 0702.01
Figure 1
WIPS General
Location Map
N
W
E
S
1 inch equals 5,127 feet
0
2,500
5,000
Feet
Overview Map
Main Map
Colorado


LYTLE WATER SOLUTIONS, LLC
MONTHLY DEMAND (AC-FT)
600
500
400
300
200
100
0
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
LEGEND
ACADEMY
DONALA
MONUMENT
PALMER LAKE
TRIVIEW
WOODMOOR
PPRWA-WIPS
MONTHLY DEMAND PATTERN AT BUILDOUT
File Name: MonthlyDemand_Buildout.cdr
Date: 05/18/2007
Project No.: 1106-07
Drawn By: VAL
Fig. No.: 2-6

Attachment E

Water Matters! Resumes

Angela Howard, P.E.

5026 S Xenia St
Denver, CO 80237
(720) 217-4513
angela_howard@alum.wustl.edu

Engineering Experience

Self Employed October 2009 - Present

Water Conservation Plan Preparation

- Meet with municipal clients to gather data about existing water system and water conservation programs. Prepare projections of future water needs, improvements and conservation.
- Collaborate to prepare state grant applications, schedule & water conservation plan for State of Colorado approval.

Water Conservation Trainer January 2010 – June 2010

- Created & customized training curriculum about water in Colorado & water conservation for high school students. Performed 5 – 8 hours of training at each of 3 high schools.
- Assisted high school students in planning and preparing activities for 3 hours of interaction with students. Oversaw students teaching water basics & conservation to 1800 fourth graders.

Kennedy/Jenks Engineers & Consultants (formerly Meurer & Associates) August 2008 – February 2009
Project Engineer Denver, CO

- Calculated and graphed system loss analysis for three south Denver-area water districts
- Acted as primary engineering contact for South Arapahoe Sanitation District board & customers including:
  Preparation of monthly board memos for District board. Creating educational materials about grease interceptor inspection program for District restaurants. Resolution of sewer service backups & other customer questions and problems. Review of plans and coordination of construction within District boundaries.

Tetra Tech RTW (formerly Rothberg, Tamburini & Winsor) February 2007 – August 2008
Senior Engineer Denver, CO

- Compiled water conservation research from sources including SWSI & Colorado Water Congress for use in water conservation plans. Assisted in preparation of water conservation plans
- Attended Pikes Peak Regional Water Authority and Water Returns meetings
- Modeled and analyzed water and sanitary sewer systems using EPANet, H20Net and H20Map Sewer

JR Engineering November 2003 – December 2006
Design Engineer Colorado Springs, CO

- Prepared water use projection reports to obtain water district allocations for new developments
- Designed water, sanitary sewer, and storm sewer systems for residential developments
- Assisted with client management, including preparation of technical communications and exhibits
- Drafted construction plans for development projects including site layout, contours and utility profiles

Leadership Experience

Society of Women Engineers (SWE) August 1997 – Present
Regional Treasurer, Region I January 2009 - present
Pikes Peak Section Executive Board June 2002 – June 2008
Including roles as president, vice-president, secretary & representative to national and regional Councils of Representatives. Planned and executed administration & programming to meet section, national goals.
Regional Student Co-Coordinator, Region I April 2003 – June 2005
Monitored 10 student sections. Member of Region Leadership Council and Student Activities Committee.
Student Transition Team representative, Nationally funded SWE Committee March 2002 – March 2005

Delta Gamma Fraternity January 1998 – Present
Region Collegiate Specialist July 2007 – June 2009
Oversaw all programming, risk management, & chapter administration for five chapters in US & Canada
Advisory Team Chairperson, Beta Delta chapter - Colorado College July 2002 – June 2007
Outstanding Alumnae Member of the Year, Colorado Springs Delta Gamma Alumnae Chapter 2003
Outstanding Greek Advisor of the Year, Colorado College Order of Omega (Greek Honorary) 2003

Education and Honors

Professional Engineer licensure: Colorado; LEED® Accredited Professional; ACEC Colorado Outstanding Woman in Engineering 2008 Nominee; Washington University in St. Louis – B.S. Civil Engineering 2001.

Skills

Drainage & Modeling Programs: EPANet; H20Net Water; H20Map Sewer; Haestad FlowMaster, PondPack, CulvertMaster, & StormCAD. **CAD Programs**: AutoCAD 2006 and Microstation J.

Linda J. Firth, MPA

2419 W. Bijou St.
Colorado Springs, CO 80904
719 213-0446
ljfirth@comcast.net

Professional experience

Currently, I own Water Matters!, a utility management consulting firm located in Colorado Springs that provides small utilities with assistance in funding, conservation planning, facilitation, public relations and public education and intergovernmental relations.

My thirty plus years experience in utilities management consulting include:

- ***TetraTech*** –Senior Utility Management Consultant to clients along the Front Range in areas of funding assistance, legislative affairs, water and conservation planning and public relations/public involvement marketing and project management. (Formerly RTW, Inc.)
- ***Denver Water*** –Community Affairs Manager, overseeing DW's print and electronic media campaigns. Managed advertising budget of $3 million. Created and carried out special events, including legislative tours and employee events.
- ***Aurora Water*** - External Affairs Manager. Managed communications, intergovernmental, community outreach and conservation functions. Managed Citizens' Utility Advisory Board activities.
- ***Black & Veatch***-National Practice Leader for public involvement, public relations, community affairs and resource conservation. Prepared conservation plans, designed, administered and analyzed surveys to measure public attitudes/values. Conducted focus groups, discussion groups, recruited ad hoc and advisory groups. Sat on national wastewater reuse committee.
- ***Colorado Springs Utilities***-Program Director for public education, marketing, public involvement and conservation. Supervised design and installation of Xeriscape Demonstration Garden, implemented all programs associated therewith. Designed award winning curriculum for K-6.
- Clients include the cities of Raleigh and Cary, North Carolina; Dallas and Beaumont, Texas; Charlotte-Mecklenburg Utilities in North Carolina; Kansas City, Missouri and Kansas City, Kansas; Utica, New York; Colorado Springs, Security Water District, Stratmoor Hills Water District, Town of Monument, Town of Palmer Lake, Town of Moffat, Castle Pines North Metro District, Cherokee Metro District and Denver, Colorado.

Education

Master's Degree, Public Administration – University of Colorado
Bachelor's Degree, Psychology – University of Colorado

Certifications

Negotiation – Harvard/MIT
Facilitation-University of Colorado, University of North Carolina

Associations

American Waterworks Assn – Conservation and Governmental Affairs Sections
Water and Environment Federation
Alliance for Water Efficiency – Outreach and Public Education Committees
Water Returns – Board of Directors
Colorado Water Wise – Board of Directors
Pikes Peak Community College – WQM Program Advisory Committee

References

Supplied on request